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ABSTRACT

A study to improve the reading and mathematics skills of selected second-grade students at Albert Sidney Johnston Elementary School utilized educational television programs as supplements to the basal programs in reading and mathematics. This practicum at the all-minority school was designed (1) to improve reading skills to mastery of 7 of the 12 skills recognized in the Dallas Independent School District curriculum as essential for second-grade students, (2) to improve mathematics skills to mastery of 20 of the 25 essential skills, (3) to lower the anxiety level of the students toward school by 50 percent as measured by the State-Trait Anxiety Inventory for Children, and (4) to decrease absenteeism by five percent. Staff training for teachers is described, as well as student and teacher reactions to the program. The practicum was not successful as implemented according to the established criteria; however, as a result of this project, the ITV program is being revised to meet the needs of the students and is being implemented in the school for a second year. (Author/RAO)

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USING INSTRUCTIONAL TELEVISION VIDEOCASSETTES AS AN ALTERNATIVE SUPPLEMENT TO THE READING AND MATHEMATICS INSTRUCTION IN ALBERT SIDNEY JOHNSTON ELEMENTARY SCHOOL

by Richard W. Campbell

Submitted in partial fulfillment of the requirements for the degree of Doctor of Education, Nova University.

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TABLE OF CONTENTS

	PAGE
ABSTRACT	i
INTRODUCTION	ii
THE PROBLEM	1
A SOLUTION TO THE PROBLEM	6
Defining Practicum Objectives	6
Alternative Solutions Considered	7
General Plan	8
Television Programs Used	9
IMPLEMENTING THE PRACTICUM	15
Selection of Student Participants	15
Staff Training for Teachers	15
Topics selected for staff training	16
Testing of Participants	17
Reading	17
Mathematics	19
Classroom Implementation of the Program	19
Monitoring the Classes	23
Teacher-Principal Conferences	23
EVALUATING THE PRACTICUM	29
Results of Product Evaluation	30
Student Reading Skills-Objective One	30

PAGE

Test Results-Reading Skills 32

Average test results..... 33

Summary..... 34

Student Mathematics Skills-Objective Two..... 34

Test Results-Mathematics Skills..... 36

Average test results..... 38

Summary..... 39

State-Trait Anxiety Inventory for Children (STAIC)-Objective Three..... 40

Test results..... 41

Summary..... 41

Student Absences-Objective Four..... 42

Evaluation..... 42

Summary..... 43

Results of Process Evaluation..... 44

Student Reaction to the ITV Program-Objective Five..... 44

Written reactions..... 44

Student observation checklist..... 45

Summary..... 48

PAGE

Teacher Reaction to the ITV Program-Objective Six..... 48

Written reactions..... 49

ITV questionnaire..... 51

Summary..... 53

Evaluation Summary..... 54

PROBLEMS ENCOUNTERED..... 57

CONCLUSIONS AND RECOMMENDATIONS..... 59

FURTHER APPLICATION AND FOLLOW-UP..... 61

APPENDICES..... 63

Appendix A..... 63

Appendix B..... 64

Appendix C..... 65

Appendix D..... 66

Appendix E..... 68

Appendix F..... 76

Appendix G..... 84

Appendix H..... 88

Appendix I..... 89

LIST OF TABLES

PAGE

Table 1
Student Performance on Iowa Tests of Basic Skills in Innter-City Schools - Grade Two 1975-76..... ii

Table 2
Grade Place Results of Iowa Tests of Basic Skills for Second-Grade Students in Reading at Albert Sidney Johnston..... 2

Table 3
Grade Place Results of Iowa Tests of Basic Skills for Second-Grade Students in Mathematics at Albert Sidney Johnston..... 2

Table 4
Pretest Results of the Test of Essential Reading Skills for Grade Two ITV Classes..... 18

Table 5
Pretest Results of the Shaw/Hiehle Test Grade Two for ITV Classes..... 20

Table 6
Comparison of Programs..... 28

Table 7
Pre- and Posttest Results of the Test of Essential Reading Skills for Grade Two ITV Classes..... 32

Table 8
Posttest Results of the Test of Essential Reading Skills, Level 2..... 33

Table 9
Pre- and Posttest Results of Shaw/Hiehle Test Grade Two, for ITV Classes..... 37

Table 10
Posttest Results of the Shaw/Hiehle Test, Level 2..... 39

Table 11
Summary Results of the STAIC Pretest-Posttest
Second-Grade Children 1976-77..... 41

Table 12
Summary Results of Absenteeism, Grade Two,
1976-77 School Year..... 43

Table 13
Summary Results of Observation Checklist..... 46

Table 14
Summary Results of Teacher Responses:
Instructional Television Questionnaire..... 52

Table 15
Analysis of Posttest Results: Instructional Television
Questionnaire (Teachers' Responses)..... 53

ABSTRACT

The purpose of this practicum was to improve the reading and mathematics skills of selected second-grade students at Albert Sidney Johnston Elementary School. The primary means employed to achieve that purpose was the use of Instructional Television Videocassette (ITV) tapes as supplements to the basal programs in reading and mathematics. The objectives of the practicum were (a) to improve reading skills to an average of 7 of 12 skills recognized in the Dallas Independent School District (DISD) curriculum as essential for second-grade students, (b) to improve mathematics skills to an average of 20 of the 25 essential skills, (c) to lower the anxiety level of the students toward school by 50 percent as measured by the State-Trait Anxiety Inventory for Children (STAIC), and (d) to decrease absenteeism by five percent. Staff training for teachers and all necessary equipment were available for use. The Test of Essential Reading Skills, Shaw/Hiehle Test and the State-Trait Anxiety Inventory for Children were used for testing. Student and teacher reactions to the program were also obtained. The practicum was not successful as implemented according to the established criteria; however, as a result of the project at Albert Sidney Johnston, the ITV program is being revised to meet the needs of the students and is being implemented in that school for a second year.

INTRODUCTION

According to latest data furnished by the Research and Evaluation Department of the Dallas Independent School District more than 85 percent of the students in the Dallas inner city are performing below grade level in reading and mathematics skills in elementary school. Ninety percent are below grade level in secondary school. These data are more shocking due to the fact that for the past five years federally funded programs under Title I of ESEA have been implemented in these schools. Little progress has been noted.

The magnitude of the problem in the inner-city school is summarized in the following table. The figures presented in that table are based upon available data from the Iowa Tests of Basic Skills provided by the Research and Evaluation Department of DISD.

Table 1

Student Performance on Iowa Tests of Basic Skills
in Inner-City Schools - Grade Two
1975-76

Achievement In	% Above Grade Level	% Below Grade Level
Reading Skills	34	66
Mathematics Skills	24	76

N=2053

Sixty-six percent of all second-grade students were performing below grade level in reading skills and 76 percent were below grade level in mathematics skills. Albert Sidney Johnston Elementary School's second grade was included in these data.

Albert Sidney Johnston is an all-minority, kindergarten through sixth grade, elementary school located in the inner city of Dallas, Texas. The student population (1975-76) had the following ethnic composition: 969 Negroes, 85 Mexican-Americans, and two Anglos. The average parental education was placed at 13.75 years. The range of socio-economic status was from "upper middle" to "lower," with some parents having master's degrees and doctorates but the majority having less than a high school education. The overall socioeconomic level of the community was described as "lower."

The school was staffed by 47 certificated teachers, 11 support personnel, 1 principal and full staffs in the lunchroom and custodial areas. The ethnic composition of the professional staff was 60 percent Anglo and 40 percent minority. The range of experience was from zero to 28 years, with most having 6 to 10 years' experience. Thirty-one teachers had bachelor's degrees and sixteen had master's degrees.

Johnston students lived in the immediate neighborhood of the school, no student more than two miles away. A few of them came from well-maintained, multiple-family dwellings, with most coming from declining, frame, single-family and multiple-family units.

The absence rate for 1975-76 was 14 percent, meaning that an average of 86 percent of the students was in attendance each day. The district-wide average attendance was well over 90 percent according to the Research and Evaluation Department of DISD.

Students at Johnston also had a high rate of mobility. According to 1975-76 records there was an average of 3.12 transfers in or out of school each day, making the student mobility rate stand at slightly over 52 percent. This is compared to the district rate of mobility of 13 percent.

Lack of parental participation and education was also recognized as a contributing factor to the problem at Johnston. Surveys conducted informally by teachers and formally by the Department of Research and Evaluation revealed that few parents subscribed to a daily newspaper or any magazines at home. Low emphasis was placed by parents on reading and mathematics skills. In addition, parents were very hesitant to get involved with the educational process because they either would not or could not help. Much of the time spent by students at home was in viewing television programs after school and on weekends.

Prior to inauguration of this practicum, Johnston teachers were using a multiple approach to teaching reading and mathematics in second grade. Along with the basal programs in each area, ESEA Title I programs were being used as supplements. Southwest Regional Laboratory (SWRL) programs were providing those supplementary materials. Students were receiving two reading lessons and two mathematics lessons each day. Teachers believed the two lessons were merely repetition of each other and did not challenge the students' interest.

THE PROBLEM

In the Dallas Independent School District (DISD), lack of student achievement in reading and mathematics has become a major issue. The General Superintendent and the School Board have repeatedly emphasized the need for improvement of student achievement in these two vital areas. Insofar as individual school principals have the responsibility of being the instructional leaders of their respective schools, so has each principal been concerned with and placed emphasis upon improving student achievement in these two areas.

The results of the Iowa Tests of Basic Skills (ITBS) given to the second-grade class at Albert Sidney Johnston during 1976 indicated the median percentile of 20 in reading and 15 in mathematics, based on large-city norms. A further look at the data showed that 104 of 134 (78%) students were below grade level in reading, and 115 of 134 (86%) in mathematics. Tables 2 and 3 reveal the complete breakdown of reading and mathematics grade-level achievement in grade two.

On the Test of Essential Reading Skills, developed by the DISD and given at the beginning of the year to place students at their instructional level, the second-grade students at Johnston achieved

Table 2

Grade Place Results of Iowa Tests of Basic Skills for Second-Grade Students in Reading at Albert Sidney Johnston

Number of Students	Grade Level
2	4.0 and above
9	3.0-3.9
19	2.0-2.9
86	1.0-1.9
18	Below 1.0

Table 3

Grade Place Results of Iowa Tests of Basic Skills for Second-Grade Students in Mathematics at Albert Sidney Johnston

Number of Students	Grade Level
0	4.0 and above
0	3.0-3.9
19	2.0-2.9
83	1.0-1.9
32	Below 1.0

an average of 3 of the 12 skills recognized as being essential in the second grade in DISD curriculum. The designated skills may be found in appendix C. Students were found to be especially deficient in those skills related to oral language development. For example, students were generally deficient in skills that dealt with word attack skills, identifying contractions, and knowledge of sounds.

In the area of mathematics, 25 skills were recognized as essential at the second-grade level. These skills may be found in appendix D. On the Shaw/Hiehle Test[1], given to place the students at their instructional level in mathematics, the students achieved an average of 12 skills. Students were most deficient in subtraction skills, finding missing numerals, counting by numbers other than ones, and skills related to fractions.

Another important component in identifying and evaluating these reading and mathematics deficiencies was teacher observation. Since the pre-school home environment of the inner-city child often does not prepare him or her for formal education in the public schools,

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[1]Shaw, Bryce R., and Hiehle, Petronella, M. W. Individualized Computational Skills Program. Boston: Houghton Mifflin, 1974.

the Johnston teachers had observed that teaching such students with the available classroom materials was quite difficult. In addition, these teachers confirmed that, from their observations, approximately 80 percent of their pupils were performing below grade level.

The ideal objective which had been established for all schools in the DISD was to have all students' achievement in reading and mathematics on or above grade level. The goal for Albert Sidney Johnston was no different.

The problem of increasing the mathematics and reading levels of the students at Johnston was compounded by a high rate of absenteeism. During the 1975-76 school year, only 86 percent of the students averaged attendance each day, meaning 14 percent were absent daily. The district-wide average attendance was well over 90 percent, according to the Research and Evaluation Department. Absenteeism at Johnston was greater than desired.

It was a concern of the principal and faculty that low achievement and absenteeism could create and/or intensify student anxiety toward school. Student anxiety as measured by the State-Trait Anxiety Inventory for Children (STAIC) developed by Dr. Charles D. Spielberger of the University of South Florida was at higher level than desired for good achievement. (See appendix B.)

Obviously then, it was unlikely that parental involvement could be counted upon to relieve the absenteeism and the resultant student anxiety problems recognized at Johnston. It was therefore concluded that the present curriculum in reading and mathematics needed to be adjusted to allow students to enjoy learning. A new program of instruction needed to be developed, one which would involve positive reactions from both students and teachers. Something had to be added to make the learning process more positive.

A SOLUTION TO THE PROBLEM

Defining Practicum Objectives

Based upon the expressed needs of the second-grade students at Johnston, the following objectives were defined by the principal and teachers to correct the deficiencies in reading and mathematics skills, high anxiety, and poor attendance.

1. To improve students' average reading skills to a mastery of 7 of the 12 skills measured by the Test of Essential Reading Skills and have been recognized within the DISD curriculum as essential for second-grade students. (See appendix C.)
2. To improve students' average mathematics skills to a mastery of 20 of the 25 skills measured by the Shaw/Hiehle Test and have been recognized within the DISD curriculum as essential for second-grade students. (See appendix D.)
3. To help students lower the level of their anxiety toward instruction by 50 percent, as measured by the State-Trait Anxiety Inventory for Children.
4. To decrease by 5 percent the absenteeism of students participating in the program.
5. To determine if student reaction to the program is positive or negative.
6. To determine if teacher reaction to the program is positive or negative.

Alternative Solutions Considered

Aware of the need for a new approach to teaching mathematics and reading, the principal and teachers of the Johnston second grade considered several alternatives. The schedule of the students could have been adjusted by one of the following strategies:

1. Eliminate either physical education, art, or music and add more time to reading and mathematics
2. Schedule students into classes with reading specialists

These two alternatives were eliminated. Schedule adjustments such as those suggested by alternative 1 would have caused students to miss important parts of their education. Reading specialists were not available in such quantity at Johnston to make alternative 2 feasible.

Additional personnel could have been assigned to reading and mathematics or volunteers used. In either case funds and personnel were not readily available.

The possibility of using instructional television was also suggested as an alternative approach which might offer a solution to the problem. As a preliminary inquiry into that possibility, the second-grade teachers at Johnston performed an oral survey of their students. They asked the following questions:

1. How long do you watch television on weekends?
2. How long do you watch television after school each day?
3. Do you read to your parents?
4. Do your parents take a daily newspaper?

According to that survey, students indicated that they were very fond of watching television. Ninety percent of the second graders spent two to four hours daily after school and eight to ten hours on weekends watching regular commercial programs. As previously indicated, very few students were encouraged to do any reading at home.

Having discussed the results of this survey and explored information regarding the uses of instructional television in the classroom, it was concluded that instructional television might offer the new approach to mathematics and reading instruction which would help solve the problems identified at Johnston.

General Plan

The main strategy of this practicum was to capitalize on the students' existing interest in television viewing and to use videocassettes not only to improve reading and mathematics achievement but also to lower the student anxiety level and reduce absenteeism.

According to Gilliom and Zimmer, "Instructional television wisely used can assist in unlocking the potential to learning."[2] A publication by the New Jersey Association of School Administrators stated, "Instructional television is a highly flexible teaching tool, capable of adding much to an educational process when imaginatively used."[3]

Two choices were available in using instructional television: (a) on-the-air programs or (b) videocassettes of programs. It was decided that videocassettes would be used rather than on-the-air programs to allow for (a) flexibility in scheduling by the teacher, (b) better reception by eliminating open broadcasts, (c) tapes to be used in part or in toto to teach a lesson, and (d) repetition of a tape broadcast to emphasize a teaching point.

Television Programs Used

The local educational television station KERA-TV was contacted regarding the availability of the cassette tapes of lessons on reading and

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[2]Gilliom, Bonnie Cherp, and Zimmer, Anne. ITV: Promise Into Practice. Columbus, Ohio; Columbus Public Schools, 1972, p. 49.

[3]Building An ITV System: A Guide for New Jersey Administrators. Trenton: New Jersey Association of School Administrators.

mathematics. Tapes were available for loan to schools. Once the program was set up, Johnston teachers could receive one televised lesson on reading (Word Shop[4]) and one on mathematics (Math Factory[5]) each week for a period of eighteen weeks. Each televised lesson could be kept for one week and then would have to be returned to the station. A different lesson could be loaned to the school each week for students' viewing during the eighteen weeks.

Word Shop is a language arts series of thirty color programs produced by Instructional Television Coop. in Falls Church, Virginia. Each program lasts 15 minutes and presents one concept that is discussed and illustrated by Mr. John Robbins, the host. That concept is repeated and reinforced by his friends, the animal puppets Art the Mouse and Al the Cat. Helping them out are the child puppets Sarah, William, and Irene.

The programs present concepts and help motivate the students to learn more about these concepts. During each televised lesson, ideas

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[4]Word Shop, Instructional Television Cooperative, Falls Church, Virginia.

[5]Math Factory, Mississippi Authority for Educational Television, 3825 Ridgewood Road, Jackson, Mississippi, 39205.

and activities are introduced to challenge students to use their imagination to be creative, and to learn new listening, speaking, reading, and writing skills.

The teacher can choose from the list of suggestions in the teachers' guide or make up activities that are appropriate for the students. Each program in the guide has six areas in which the program is described:

1. Program concept
2. Readiness activities
3. Related skill development
4. Program description
5. Classroom follow-up activities
6. Evaluation

The teachers' guide describes each program by defining the Program Concept in terms children can understand. For example: In the program "Story Telling" the guide states that a good story has a structure (beginning, middle and end), characters (who or what), action (what is going on) and a setting (where and when).

In Readiness Activities the guide describes the appropriate review of concepts and focuses student attention on the concept to be explored

in the televised program. In "Story Telling" the guide suggests that one student tell a story and then determine if the other students know the parts of the story.

Related Skill Development offers a broad range of suggestions to the teacher for developing and reinforcing concepts and skills. The guide suggests while watching "Story Telling" the students should:

1. Listen and watch for clues to the different parts of a story.
2. Watch how parts of the story unfold. Be able to identify the different parts.

The Program Description describes what actually takes place during the broadcast of the program. It tells the highlights of each program.

The guide suggests that students may do many things after a televised program. In Classroom Follow-up Activities of "Story Telling" the teacher has a choice of seven activities students may do, from telling stories in small groups to writing stories to dramatizing stories.

The effectiveness of a program is determined by the suggestions in the Evaluation part of the guide. For example, in "Story Telling" the

teacher evaluated the presentation by the following:

1. How well did the students recite, listen, read, write, draw and dramatize?

2. Was there carry-over of skills, interest, and motivation to other classroom activities, play, homework and special projects?

Math Factory is a series of televised mathematical experiences for primary (K-3) school children. The series is made up of 30 color programs produced by the Mississippi Authority for Educational Television. Each program lasts 14 1/2 minutes.

Each program incorporates colorful puppet characters and a wonderous factory into informal mathematical learning situations. When the Math Factory machine starts producing, mathematical situations develop around topics such as sets, geometry, number patterns and place value, problem solving, fractions, and money. Most of the important ideas of a beginning modern mathematics program are incorporated into the series.

Each program is provided with a teachers' guide which serves as an outline to aid the teacher in planning. In the outline the teacher finds the following:

1. Program synopsis - (a brief description of the televised program)
2. Purpose of the program - (the basic idea or mathematics skill the program addresses)
3. Pre-telelesson (to prepare the students for the televised presentation)
4. Telelesson content points (the objectives covered in the televised program)
5. Post-telelesson activities (follow-up activities)
6. Teacher and student references to the basal mathematics text

Beginning in December, 1976, the students participated in the ITV program two hours each week as a supplement to the regular instructional programs. One hour each week was spent on reading and one hour on mathematics. The program lasted for eighteen weeks.

IMPLEMENTING THE PRACTICUM

Selection of Student Participants

There were six heterogeneously grouped sections of second-grade students at Johnston. All Six teachers who taught the sections were interested in implementing the ITV program, but unfortunately sufficient equipment and resources were not available for use by all six teachers. As a result, three randomly selected target sections were chosen. Each of the three sections consisted of 30 students, for a total of 90 participants. Although these 90 students started the program, transfers to other schools reduced to 59 the number of students who finished the program.

Staff Training for Teachers

During the month of September, fifteen teachers (the three chosen by lot for the practicum and twelve from other grade levels, chosen by the principal) were involved in eight sessions of staff training. They met for one hour, two days per week, after school in sessions conducted by utilization specialists from KERA-TV. Each session included viewing of utilization tapes, consultations by KERA-TV specialists, and printed materials focusing on the session topics.

The materials and utilization tapes used in the training of the teachers came from a program developed by the Maryland State Department of Education.[6] (See appendix E for a sample of printed materials.) These materials were obtained from the Maryland State Department of Education.

Topics selected for staff training. Selection of topics for use in the staff training was based upon the assumption that none of the teachers knew how to properly utilize instructional television in the classroom. Even though teachers had varied levels of understanding of instructional television, no one had previously used videocassettes. Basic utilization subjects were therefore chosen by the utilization specialists of KERA-TV:

1. Introduction to Instructional Television and Learning
2. Establishing the Climate for Instructional Television (two sessions).
3. Instructional Television and Curriculum Planning
4. Before Instructional Television
5. During Instructional Television (two sessions)
6. After Instructional Television (two sessions)

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[6]Instructional Television Utilization: A Teacher Education Series. Maryland State Department of Education, Division of ITV, 1973.

Each of the sessions deliberately aimed at training the teachers to recognize and use instructional television as an integral resource within the classroom. Simultaneously, teachers learned the basic steps of how to operate the cassette player and television monitor during these sessions.

Testing of Participants

During the third week of September the participants were given the Test of Essential Reading Skills and the Shaw/Hiehle Test as pretests of reading and mathematics skills respectively. These pretest scores were retained and later compared with posttest scores obtained from the same tests when administered at the end of the program.

Reading: Table 4 reveals the pretest results of the Test of Essential Reading Skills. The number of students deficient in a skill ranged from 31 ("Knows common sounds for 'g' spelling") to 57 ("Reads with accuracy, fluency and understanding"). The spread was 26. Upon entry into the practicum students averaged being deficient in 9 of the 12 skills.

Table 4

Pretest Results of the Test of Essential Reading Skills for Grade Two ITV Classes

Skill	Number of Students Deficient
1. Knows beginning three consonant sounds	44
2. Reads words with alternate long vowel spelling	47
3. Reads words with diphthongs	46
4. Knows common sounds for "c" spelling	34
5. Knows common sounds for "g" spelling	31
6. Reads words with common endings containing a vowel plus "ck," "ld," "nd," "mp," and "st"	39
7. Identifies base words	37
8. Identifies contractions	46
9. Identifies two-syllable words	48
10. Can use word attack skills	46
11. Recognizes basic sight vocabulary by reading a second-grade level passage	56
12. Reads with accuracy, fluency and understanding	57

N=59

Mathematics: Table 5 reveals the pretest results of the Shaw/Hiehle Test in mathematics skills. The number of students deficient in a skill ranged from 2 (skills 1, 4, 6, and 7) to 59 (in skills 19 through 25). The spread was 57. Students averaged being deficient in 13 of the 25 skills at the beginning of the practicum.

Classroom Implementation of the Program

During the first week of December, teachers began using the videocassettes taped specifically for the practicum by KERA-TV as an integral part of their reading and mathematics instruction. The program Math Factory was used in mathematics. Word Shop was chosen by the teachers to be used in each reading class. Each taped lesson remained in the school for one week to be used by the teachers. Students viewed other programs during the time of the practicum, but Math Factory and Word Shop were the only programs used as supplements to teaching reading and mathematics.

All the KERA-TV programs addressed the baseline mastery objectives by being integrated into the lessons as supplements to the basal teaching. At times they were used as introductions; at other times they provided reinforcement, while at still other times

Table 5

Pretest Results of the Shaw/Hiehle Test
Grade Two for ITV Classes

Skill	Number of Students Deficient
1. Use words to compare sizes of objects	2
2. Match the number of objects in two sets	10
3. Use the expressions "more than," "less than," "the same as," to compare the number of objects in two sets	20
4. Rote count fluently from 1 through 10	2
5. Use the word "zero" to indicate that there are no objects in a set	6
6. Count the number of objects in a set with up to 10 objects	2
7. Tell the number that "comes after" a given number (up to 10)	2
8. Tell the number obtained when 1 is added to a given number	3
9. Count from a given number up to 10	6
10. Identify the numerals from 0 through 10	4
11. Draw the number of objects indicated by a given numeral	22
12. Write the numeral that indicates how many objects are in a given set	15
13. Rote count from 1 through 20	27
14. Add numbers from 1 through 10 written in horizontal notation	48
15. Subtract numbers from 1 through 10 written in horizontal notation	52
16. Identify the numerals from 1 through 20	32
17. Add and subtract numbers from 1 through 20 written in horizontal notation	53
18. Add and subtract numbers from 1 through 20 written in vertical notation	48
19. Find the missing addends in addition and subtraction number sentences	59
20. Count by 10's through 100. Identify, put in sequence and write the numerals 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	59
21. Add and subtract the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	59
22. Add and subtract whole numbers up to 1000 with no borrowing or carrying	59
23. Rote count by 2's, 3's, 4's, 5's up to 20	59
24. Use simple fractions with simple denominators (halves, thirds, fourths, sixths, and eighths)	59
25. Rote count from 1 through 1000. Identify, put into sequence, and write the numerals from 1 through 1000.	59

N=59

they could be used as review materials. The three target classroom teachers and the principal worked as a committee to write both the mathematics and the reading lesson plans, making sure the plans supported the basal and SWRL programs of DISD at all times. (See appendix F for exemplary lessons.)

The committee, in adapting Math Factory, used the teachers' guide furnished by KERA-TV to write lesson plans for the classes. These plans, of course, were simultaneously adapted to the baseline curriculum of the DISD. For example, the baseline curriculum has as one of the mastery objectives for second-grade students: "To demonstrate mastery of multiplication facts (10's, 5's, 2's)." (See appendix D.) The Math Factory program, "Beginning Concepts in Multiplication" served as an excellent supplement to the basal teaching of this objective.

Because Word Shop programs did not address the specific DISD baseline objectives for grade 2, the school's reading resource teacher was asked to become a member of the committee responsible for writing lesson plans. With that added expertise, the committee developed ways the targeted second-grade programs could be adapted

to the baseline. (Word Shop lesson plans may be found in appendix G.) Usually, the KERA-TV programs were used primarily as support for lessons involving the skills to be learned. Word Shop for instance, supported general reading skills such as inferential thinking, recall and critical listening skills as well as developmental areas in oral language, listening and writing. The program "Poems as Nonsense" was used to introduce a lesson dealing with word sounds. (See appendix C, skills 1-6.) Students, by creating their own nonsense words, were able to relate this activity to decoding real words. The program "Comic Strips" was used to encourage students to begin reading at home, starting with comic books. Although no follow-up was made to definitely ascertain the effects of the program, it was hoped that student interest in reading the comic books would be transferred to library books and other higher level readers. "Comic Strips" also made use of nonsense words to improve the students' skills in decoding and word attack, thus reinforcing the basal lesson on word sounds.

In all planning, the ITV programs were never thought of as ends within themselves but rather as means for learning specific skills. The committee was constantly and consistently aware of this focus.

Monitoring the Classes

Each week the principal visited each of the three classes. At the beginning of the practicum, three students from each class were chosen to be observed. These students were randomly selected, using a table of random numbers.[7] According to a senior evaluator in the DISD Research and Evaluation Department, a 10 percent random sample of students was sufficient to determine changes in student participation in classes of approximately thirty students. That 10 percent criterion was satisfied by the selection of three students from each class. Data collected on each randomly selected student were recorded on an observation check list. (See appendix H.) Those data are analyzed in the evaluation section of this report. The random sample was used only for monitoring the classes.

Teacher-Principal Conferences

The principal also monitored the teachers' use of the ITV programs in each lesson. Meetings were held after school each second and fourth Wednesday to review the progress of the practicum. Each teacher had

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[7] Popham, W. James. Educational Statistics. New York: Harper and Row, 1967, p. 381.

the opportunity to make suggestions regarding improvement of the program.

At the initial meeting of the principal and the teachers it was decided that the main goal to keep in mind was the improvement of the reading and mathematics skills of those second-grade students in the ITV program. It was agreed that everything discussed in subsequent meetings should be directed toward attaining that goal. ITV was not to be used as a crutch by the teachers, nor was it to supplant their teaching.

Guidelines were developed to assure that ITV would be used properly. Teachers needed to remind themselves that ITV was to improve their ability to individualize instruction to allow for different ability levels. The teachers also wanted to make learning occur through the discovery process by "doing."

A series of guiding questions was developed as sort of self-check list for the teachers:

1. Do I use ITV to individualize instruction?
2. Could I use ITV for different ability levels?
3. Do I make use of materials geared to having learners discover relationships for themselves?

4. Do I really believe (and act on that belief) that my students need to "do" to "learn"?
5. Do I make the effort to assure that ITV brings illuminating experiences to the students?
6. Do my students need a more flexible ITV?

The check list was used primarily for the teacher to assure herself that she remained on the task assigned through use of ITV. The teachers considered the check list very helpful and used it throughout the practicum.

Another problem discussed at subsequent meetings between the principal and teachers was how to integrate ITV into the lesson plans. Both principal and teachers realized that it was necessary to assure that ITV was used to its maximum potential and flexibility, to assure that it did not supplant the mandatory basal program, and to assure that it did capitalize on all human resources available.

The following guidelines were used:

1. ITV should be used as a supplement only.
2. ITV may be shown to all or part of a class.
3. ITV plans should be based on teachers' and students' own strengths, interest, imagination, thoughts, personality, and perceptions of student needs.

After some of the telecasts had been used, it was discovered that many of the programs did not fit the needs of the slow learner. The telecasts were designed primarily to meet a general need, not to meet the particular needs of a specific group, such as slow learners. Teachers were therefore asked to follow a special procedure developed by the principal:

A. Before the telecast in the classroom the teacher will:
    1. Preview the telecast to know its contents.
    2. Read the teachers' guide for the telecast.

B. During the telecast the teacher will:
    1. List vocabulary and concepts that need explaining or clarifying.
    2. List conflicts between what the students already know and program content.
    3. List questions that need answers.
    4. Note ways that individual differences can be capitalized upon after the telecast.

C. After the telecast, the teacher will:
    1. Clarify and explain concepts as needed, based on individual differences.
    2. Have students react to the telecast.

Another problem threshed out at principal-teachers' meetings related to the fact that the videocassettes were in the possession of the teachers for only one week; then they had to be returned to the television station. The suggestion was made in one of the principal-teacher conferences that the school or District maintain an ITV library so that tapes might be available any time a teacher needed them. KERA-TV was consulted. It was determined that tapes could be made without any violation of copyrights; therefore a formal request was made to the DISD school board that funds for an ITV library at Albert Sidney Johnston be allocated in the 1977-78 budget.

Another suggestion coming out of the principal-teacher conferences was that the school make a television series specifically for the slow learner. KERA-TV pledged their technical support in such a project. Proposals for such a project to be accomplished at Johnston were processed for submission to the DISD school board.

In brief summary, Table 6 contrasts the features of the ITV program for the second-grade class with the characteristics of the regular program in which they would have participated otherwise.

Table 6

Comparison of Programs

ITV Classes	Regular Classes
Scheduling	
1. Reading: Basal and SWRL and ITV used as supplements.	1. Reading: Basal with SWRL used as supplement.
2. Word Shop used in the reading program.	2. No planned ITV program used.
3. Mathematics: Basal with SWRL and ITV used as supplements.	3. Mathematics: Basal with SWRL used as supplement.
4. Math Factory integrated into the mathematics program.	4. No television programing used.
Teacher Preparation	
1. Group planning done each week.	1. Teachers planned individually.
2. Plans integrated ITV into lessons.	2. No television used.
3. Teacher-principal regular scheduled planning sessions.	3. Only regular faculty meetings.
Teacher Selection and Training	
1. Teacher selection based on interest in teaching using television.	1. Teachers assigned according to certification only.
2. Teachers participated in staff-training on use of television in the classroom.	2. No television training for teachers.

EVALUATING THE PRACTICUM

The objectives of the practicum were:

1. To improve students' average gains in reading skills to a total of 7 of the 12 skills measured by the Test of Essential Reading Skills and recognized by DISD curriculum as essential for second-grade students. (See appendix C.)
2. To improve students' skills in mathematics to an average achievement of 20 of the 25 skills, as measured by the Shaw/Hiehle Test and recognized by DISD curriculum as essential for second-grade students. (See appendix D.)
3. To help students lower the level of their anxiety toward instruction by 50 percent, as measured by The State-Trait Anxiety Inventory for Children.
4. To decrease by 5 percent the absenteeism of students participating in the program.
5. To determine if student reaction to the program is positive or negative.
6. To determine if teacher reaction to the program is positive or negative.

Reading skills mastery was measured by the DISD Test of Essential Reading Skills, and mathematics mastery was tested by the Shaw/Hiehle Test. The anxiety level of the students was measured by The State-Trait

Anxiety Inventory for Children (STAIC). Results of student attendance were derived from the school daily attendance records for the 1976-77 school year.

In addition to the product evaluation of the objectives, written reactions to the program were obtained from both students and teachers. Teacher reactions were further delineated by their responses to an ITV questionnaire, the results of which may be found in table 14 (page 52). These sources, along with data collected on the Observation Checklist, provided process evaluation.

Results of Product Evaluation

Student Reading Skills - Objective One

Objective one was to improve students' average gains in reading skills to a total of 7 of the 12 skills recognized by DISD curriculum as essential for second-grade students.

The DISD Board of Education established certain reading skills as being essential for students in each grade level. In the second grade the following skills were recognized as essential:

Skill 1

Knows beginning three consonant sounds.
Examples: scr, shr

Skill 2

Reads words with alternate long vowel spelling.
Examples: ai (ā), ea (ē)

Skill 3

Reads words with diphthongs
Examples: oi, ou

Skill 4

Knows common sounds for "c" spelling.
Examples: can (k), city (s)

Skill 5

Knows common sounds for "g" spelling.
Examples: good (g), gem (j)

Skill 6

Reads words with common endings containing a vowel plus "ck", "ld", "nd", "mp", and "st."
Examples: fast, hold

Skill 7

Identifies base words.
Examples: pushes, sadly

Skill 8

Identifies contractions.
Examples: do not (don't), he is (he's)

Skill 9

Identifies two-syllable words.
Examples: center, over

Skill 10

Can use word attack skills.

Skill 11

Recognizes basic sight vocabulary by reading a second-grade level passage.

Skill 12

Reads with accuracy, fluency and understanding.

a. Word recognition
b. Comprehension

Test Results - Reading Skills

Table 7 reveals the results of the Test of Essential Reading Skills. On the pretest, the number of students mastering a skill ranged from 2 students on skill 12 to 28 on skill 5. The spread was 26.

Table 7

Pre- and Posttest Results of the Test of Essential Reading Skills for Grade Two ITV Classes

Skill	Number of Students Mastering Skills		Change
	Pretest	Posttest	
1	15	53	+38
2	12	36	+24
3	13	47	+34
4	25	59	+34
5	28	58	+30
6	20	58	+38
7	22	57	+35
8	13	57	+44
9	11	44	+33
10	13	31	+18
11	3	22	+19
12	2	9	+ 7

The table also reveals a mastery-level range on the posttest results from 9 students on skill 12 to 59 students on skill 4. This represents a spread of 50. All students mastered at least two skills.

Progress was made on all skills, with skill 8 showing the greatest progress (an increase of 44 students), and skill 12 showing the least (an increase of only 7 students) representing a spread of 37. Careful planning by the teachers and wise use of the ITV programs to address these skills probably accounted for the change in mastery level of the students.

Average test results. Table 8 reveals the average results of the posttest. The highest number of skills that could be mastered on Level 2 of the Test of Essential Reading Skills was 12. Table 8 reveals that the range of mastery for the 59 students was from a low of 2 skills mastered by each of 5 students, to a high of 12 skills mastered by each of 14 students. The mean mastery level of all students was therefore 9 skills.

Table 8

Posttest Results of the Test of Essential Reading Skills, Level 2

	Number of Skills	Number of Students
Fewest skills mastered	2	5
Most skills mastered	12	14
Mean mastery level	9	59

N=59

Maximum number of skills to be mastered = 12 (See appendix C.)

Summary. For this part of the practicum to be successful, the mean mastery level was to have been 7 out of 12. The mean mastery level of all students using ITV tapes was 9 skills. The objective of the practicum was therefore considered to have been successfully attained.

Student Mathematics Skills - Objective Two

Objective two was to improve students' skills in mathematics to an average achievement of 20 of the 25 skills as measured by the Shaw/Hiehle Test. These skills are recognized by DISD as essential for second-grade students. They are as follows:

Skill 1
Use words to compare sizes of objects.

Skill 2
Match the number of objects in two sets.

Skill 3
Use the expressions "more than," "less than," "the same as," to compare the number of objects in two sets.

Skill 4
Rote count fluently from 1 through 10.

Skill 5
Use the word "zero" to indicate that there are no objects in a set.

Skill 6
Count the number of objects in a set with up to 10 objects.

Skill 7
Tell the number that "comes after" a given number (up to 10).

Skill 8
Tell the number obtained when 1 is added to a given number.

Skill 9
Count from a given number up to 10.

Skill 10
Identify the numerals from 0 through 10.

Skill 11
Draw the number of objects indicated by a given numeral.

Skill 12
Write the numeral that indicates how many objects are in a given set.

Skill 13
Rote count from 1 through 20.

Skill 14
Add numbers from 1 through 10 written in horizontal notation.

Skill 15
Subtract numbers from 1 through 10 written in horizontal notation.

Skill 16 Identify the numerals from 1 through 20.

Skill 17
Add and subtract numbers from 1 through 20 written in horizontal notation.

Skill 18
Add and subtract numbers from 1 through 20 written in vertical notation.

Skill 19
Find the missing addends in addition and subtraction number sentences. Examples: 5 + ? = 8, 7 - ? = 4

Skill 20
Count by 10's through 100. Identify, put in sequence, and write the numerals 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

Skill 21
Add and subtract the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

Skill 22
Add and subtract whole numbers up to 1000 with no borrowing or carrying.

Skill 23
Rote count by 2's, 3's, 4's and 5's up to 20.

Skill 24
Use simple fractions with common denominators (halves, thirds, fourths, sixths and eighths.)

Skill 25
Rote count from 1 through 1000. Identify, put in sequence, and write the numerals from 1 through 1000.

Test Results - Mathematics Skills

Table 9 reveals that on the pretest results, the number of students mastering skills ranged from 0 (on skills 19 through 25) to 57 students (on skills 1, 4, 6, and 7). This represents a spread of 57. Two students in the classes mastered no skills at all.

On the posttest results, the range of students mastering skills was from 5 students (on skill 24) to 57 students (on skills 1-13, 15, and 16), representing a spread of 52. The two students who mastered no skills on the pretest, mastered no skills on the posttest. The program had no effect on them.

Table 9

Pre- and Posttest Results of Shaw/Hiehle Test
Grade Two, for ITV Classes

Skill	Number of Students Mastering Skills		Change
	Pretest	Posttest	
1	57	57	0
2	49	57	+ 8
3	39	57	+18
4	57	57	0
5	53	57	+ 4
6	57	57	0
7	57	57	0
8	56	57	+ 1
9	53	57	+ 4
10	55	57	+ 2
11	37	57	+20
12	44	57	+13
13	32	57	+25
14	11	55	+44
15	7	57	+50
16	27	57	+30
17	6	44	+38
18	11	55	+44
19	0	16	+16
20	0	11	+11
21	0	23	+23
22	0	16	+16
23	0	16	+16
24	0	5	+ 5
25	0	15	+15

Progress was made on 21 of the 25 skills and ranged from 0 (on skills 1, 4, 6, and 7) to a high of 50 (on skill 15). This represents a spread of 50 between the pretest and posttest results. Skills 14, 15 and 18 were specifically addressed by the programs on number patterns and problem-solving, showing a positive effect of the ITV programs on these skills. The skills showing no gain were those which were mastered by the students prior to the practicum.

Skills 19 through 25 were those which were the most challenging. Even though addressed by the ITV programs, these skills proved too difficult for the students to master during the time of this practicum; however each skill was mastered by some students.

Average test results. As seen in table 10, the range of skills mastered was from 0 skills by 2 students to 25 skills mastered by 5 students. The maximum number of skills to be mastered on Level 2 is 25. The mean mastery level for all students was therefore 19 skills.

Table 10

Posttest Results of the Shaw/Hiehle Test
Level 2

	Number of Skills	Number of Students
Fewest skills mastered	0	2
Most skills mastered	25	5
Mean mastery level	19	59

N=59
Maximum number of skills to be mastered = 25.

Summary. The students had to master an average of 20 of the 25 designated skills for the practicum to be considered successful in the area of mathematics. Table 10 reveals that the average number of skills mastered by the students using ITV tapes was 19. Since that was short of the criterion for success, objective two was considered not to have been successfully attained.

Test results did reveal, however, that the trend was definitely toward the desired goal, thus showing promise that ITV could be used effectively as a supplement to the mathematics program at Johnston.

State-Trait Anxiety Inventory for Children (STAIC) - Objective Three

The third objective was to lower the anxiety level of the students by 50 percent as measured by the STAIC. The anxiety level of the students was measured twice during the practicum, when it began and when it ended. During the pretest, the teachers asked the students to answer the STAIC, based on their feelings at the given moment of the test. Their feelings were measured without regard to any particular stimulus or environment. The posttests were given immediately after the students had viewed one of the ITV lessons. Students were asked about their feelings as they viewed the televised program, hence the results of the posttest represented the anxiety of the students as a result of viewing the ITV lesson.

For this part of the practicum to be successful, a 50 percent decrease in anxiety was required, necessitating a desired mean score of 1.1 on the STAIC.

Test results. On a scale of one to three (one being the lowest anxiety level and three the highest), the 59 second-grade students in the practicum had a pretest score of 2,478 and pretest mean score of 2.1 as revealed by table 11.

Table 11 also reveals that the anxiety level decreased in the posttest to a total score of 1,990 and a mean score of 1.7.

Table 11

Summary Results of the STAIC Pretest-Posttest
Second-Grade Children 1976-77

PRETEST		POSTTEST	
Total Score All Questions	Mean Score Each Question	Total Score All Questions	Mean Score Each Question
2,478	2.1	1,990	1.7

N=59

Summary. Although the anxiety level did decrease to 1.7, the decline was not to the desired level (1.1); therefore, this particular objective of the practicum was not considered to have been successfully attained.

The STAIC results did show, however, that the anxiety level of students was lowered when viewing a televised lesson, thus indicating that ITV programs do have a positive effect on student attitude toward school and suggesting that the ITV programs should continue.

Student Absences - Objective Four

Objective four was to reduce student absenteeism by five percent. Traditionally, according to past attendance records furnished by the DISD pupil accounting office, as school progresses through the spring months, student absenteeism increases. ITV was to be used to decrease that trend.

Evaluation. According to table 12 the twelve weeks prior to beginning the practicum student participants were present a total of 3203 student-days and absent 278 student-days causing an absenteeism rate of 8 percent. Eighteen weeks during the practicum, which included the spring of the year, student participants were present 4884 student-days and absent 603 student-days, for an absenteeism rate of 11 percent.

Table 12

Summary Results of Absenteeism
Grade Two, 1976-77 School Year

School Year 1976-1977	Student-Days Present	Student-Days Absent	Percent Absenteeism
Prior to Students' Beginning ITV Program (12 weeks or 59 days)	3203	278	8
During ITV Program (18 weeks or 93 days)	4884	603	11

N=59

Summary. To successfully meet the criterion of objective four, a five percent decrease in absenteeism was desired. The absentee rate actually increased, making this part of the practicum unsuccessful.

Although there are no data for support, the following are possible explanations for the increase in absenteeism:

1. ITV has no effect on student attendance.
2. A longer period of time using ITV might be required to reveal any decrease in absenteeism.

Results of Process Evaluation

Student Reaction to the ITV Program - Objective Five

The fifth objective was to determine if the students' reactions to the ITV program were positive or negative. This was done in two ways: (1) ten students were chosen at random to submit written reactions to the program, and (2) the principal observed three students in each class and recorded their reactions to ITV lessons. Positive reactions indicated success and negative reactions indicated no success.

Written reactions. Ten students were chosen at random to submit written reactions to the ITV programs. Although the shows used in the practicum were Math Factory and Word Shop, the students wrote in their reactions about other shows, some of which were not on the educational television station, KERA. Students viewed other shows during the year, such as Sesame Street, Electric Company, All About You, and Let's All Sing. All these shows are mentioned in their reactions, which may be found in appendix I.

Nine of the ten reactions were positive. As Yolanda wrote: "I liked to look at Sesame Street and I liked to look at Electric Company and I wish I would see them ever day." (See appendix I, page 89.)

Yolanda was enthused enough about her comments to include liking school and the principal. In the program All About You, there was a section about babies which she remembers vividly.

Norris' reaction was also typical of the positive reactions:

> I liked Math Factory. When they had that snack bar they wear talking about them hot dogs, malts, and that made hungry.

The only negative reaction came from Lyn.

> I do not Math Factory. I hope cut it off. I like electric Company all, year. I wish shool over.

According to Lyn's teacher, Lyn has had a negative outlook on school all year. The teacher has been working on improving her attitude toward school with little or no success.

Student observation checklist. The writer of this practicum visited the classrooms each week to observe the student reactions to the ITV program. A record was kept on a random sample of three students in each class. (See page 23 regarding sample selection.) Each student was observed five times during the practicum. Table 13 reveals the results of those observations.

All students went to their assigned places more often than not. Roderick went the fewest (3), while five students went each time observed.

Table 13

Summary Results of
Observation Checklist

	Robert		Michelle		Anthony		Deanna		Roderick		Keith		Latonia		Pamela		James	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
1. Student promptly went to assigned place to begin lesson,	4	1	5	0	5	0	5	0	3	2	5	0	4	1	5	0	4	1
2. Student contributed to the lesson either orally or in writing.	0	5	4	1	5	0	5	0	4	1	4	1	3	2	5	0	4	1
3. Student completed lesson on time.	0	5	5	0	5	0	5	0	3	2	4	1	1	1	5	0	3	2
4. Total number of positive comments student made during the observations.	0		11		6		13		2		9		3		6		8	
5. Total number of negative comments student made during the observations.	0		0		1		0		0		0		0		1		0	

During each lesson the teachers had various activities in which the students participated. Example activities were writing words, cutting pictures from magazines, dramatizing what a student learned, and filling in charts. Other activities may be found in the lesson plans in appendices F and G.

Only one student failed to contribute to the lesson either orally or in writing: Robert, who seemed rather timid and also failed to complete the assigned lessons on time. Three students contributed to the lesson each time they were observed. All others contributed more often than not.

Roderick, Latonia and James did not complete their lessons on time. Five students were observed four or more times doing the assigned work.

During each lesson, students were allowed to participate in discussions about the program presented. The range of positive comments was from 0 for Robert to a total of 13 for Deanna. Some typical, positive comments were: "Mrs. Maphis, I'd like to see that tape again." "I want to be the dragon." "I just loved that story." "Math is fun on Math Factory."

The students rarely made any negative comments. The two negative comments observed were a result of the students' reluctance to play a role in a dramatization after an ITV program. The students did not exhibit any negative attitude toward the programs presented.

Summary. Objective five was to determine if the students' reactions to the program were positive or negative. Of the ten randomly selected students' written reactions, nine were considered positive and only one considered negative. According to the results of the observation of the students by the principal, students participated in a positive manner during the ITV lessons. The results of the evaluation of this objective were considered positive and therefore successful.

Teacher Reaction to the ITV Program - Objective Six

The sixth objective was to determine if the teachers' reactions to the ITV program were positive or negative. Evaluation data were derived in two ways: (1) the teachers submitted written reactions to the program, and (2) teachers evaluated the staff training by answering a questionnaire on the effectiveness of their training. Success was indicated by positive reactions and no success was indicated by negative reactions.

Written reactions. Teachers in the ITV program were asked to submit a written evaluation of the program. Their evaluations were guided by three basic questions:

1. What did I like best about the program?
2. What did I like least about the program?
3. If I could make one change, what would it be?

These questions were to be used only as a guide to the narrative evaluation.

The evaluations of a mathematics teacher and a reading teacher follow:

(a) Mathematics. Mrs. Jane Adamson, who used ITV in the area of mathematics, submitted the following:

> Instructional television is a very valuable tool in the enhancement of educational opportunities for inner-city children. These children, in my view, greatly profited from the added experiences provided by the excellent videotapes furnished by KERA-TV during the 1976-77 school year. One of the most valuable in my instructional program was Math Factory. Inner city children are accustomed to the television medium, therefore their attention is captured immediately.
>
> However, there is one improvement that I might suggest in the math program. If these tapes could be ordered when needed or kept in the school library they would then be available whenever individual math instructional programs need such enrichment or drill.

> Instructional television is an excellent tool. It is my hope that we will be able to continue to use it.[8]

(b) Reading. According to Mrs. Jane Hoffman, a reading teacher who used ITV, television is a very valuable teaching medium.

> I used the ITV programs with great satisfaction during the school year 1976-1977. I showed my class the Word Shop program weekly. It presented concepts for understanding language in reading and writing. The presentation was innovative and motivated the children to learn more than I could using other classroom materials.
>
> I often used other programs from series in social science, music, science, and linguistics. They were helpful in bringing experiences into the classroom which were not available in any other material.
>
> I instructed the children in using television as a source for learning as well as entertainment. Since television is the most available source of learning in their homes I believe this instruction is essential. Skills, such as program selection, attending in order to gather information and reporting information were practiced.
>
> I am anticipating the use of ITV in my classroom in the future. In planning, it occurs to me that it would be more productive to be able to select lessons which coordinate more closely with the curriculum and with the immediate concerns of the children. A library of videocassettes would be ideal.
>
> Since dreams are free I can share another with you. I have often felt that I could make lessons on videocassettes that would greatly facilitate individualized instruction for my classes. It would therefore be profitable to have video recording equipment available.[9]

---

[8]Jane Adamson, mathematics teacher at Albert Sidney Johnston Elementary School, Dallas, Texas.

[9]Jane Hoffman, reading teacher at Albert Sidney Johnston Elementary School, Dallas, Texas.

ITV Questionnaire. A total of 15 teachers on the Johnston staff participated in the staff training for the ITV program. The ITV Questionnaire results found in table 14 reflect the opinions of the 15 teachers (all other evaluations in the practicum were limited to the second-grade students.)

According to table 14, staff training did change the opinions of the teachers regarding all statements except statement 5 ("Instructional programs meet age and ability levels of my student.") As pointed out in Problems Encountered (page 57), the programs offered were designed for the average students; unfortunately, most students at Johnston were below average.

Statement 11 concerned teachers' opinions as to whether they were adequately trained to utilize ITV properly. Posttest results indicated the success of the inservice training. Before the training, only two teachers agreed that they had had adequate training, but all 15 agreed after receiving the training offered them.

According to the DISD Research, Evaluation and Information Systems Department, a 90 percent positive response on the questionnaire would cause the teacher training to be considered successful.

Table 14

Summary Results of Teacher Responses
Instructional Television Questionnaire

Statement	Pretest			Posttest		
	Agree	Undecided	Disagree	Agree	Undecided	Disagree
1. Instructional television is a valuable teaching tool.	14	1	0	15	0	0
2. ITV should be used as an integral part of teaching.	12	3	0	15	0	0
3. Students are motivated by use of instructional television.	10	4	1	13	2	0
4. The way I like to teach allows for the use of ITV.	13	2	0	15	0	0
5. Instructional programs meet age and ability levels of my students.	12	1	2	11	0	4
6. ITV programs are relevant to my subject area.	13	1	2	15	0	0
7. I can schedule my lessons to coincide with appropriate ITV programs.	9	2	4	13	0	2
8. I am familiar with the ITV programs which are offered in Dallas.	9	3	3	15	0	0
9. Long-range lesson-planning with use of ITV is possible.	13	1	1	15	0	0
10. At present I feel I can easily adjust and tune the ITV equipment for use in my classroom.	6	3	6	13	2	0
11. I have the in-service training necessary to utilize ITV properly.	2	3	10	15	0	0
12. The television equipment in my school is kept in good working order.	5	3	7	15	0	0
13. Television reception in my school is satisfactory.	2	2	11	7	2	6

Table 15 reveals the total number of positive responses to be 177. A positive response was to agree with the statement. Eighteen negative responses resulted from teachers' either being undecided or disagreeing with the statement. The percent of positive responses was 91 percent. The teacher training component of the practicum was therefore considered to have been successful.

Table 15

Analysis of Posttest Results
Instructional Television Questionnaire
(Teachers' Responses)

Total Positive Responses	Total Negative Responses	Percent Positive Responses
177	18	91

Summary. Objective six was to determine if the teachers' reactions to the program were positive or negative. According to the teachers' written reactions, the program had a positive effect on their teaching. The ITV Questionnaire results indicated a positive reaction to the staff training. This objective was considered successful, since the teachers' reactions were positive.

Evaluation Summary

Evaluation of the practicum was made in six areas. The first was in the area of reading skills achievement. The goal was for students in the practicum to achieve an average of 7 of the 12 skills essential for second-grade students. The students attained an average of 9, making this objective successful.

The second objective was in the area of mathematics skills achievement. The goal was for the students to achieve 20 of the 25 essential skills for second grade. They attained 19 skills, only one short of success. Based upon the established criterion, however, two was considered not to have been successful.

In the third area students were to lower their anxiety level by 50 percent as a result of the ITV lessons. To meet the goal, student anxiety would have to have been lowered to 1.1, as measured by the STAIC. It was lowered from 2.1 to 1.7, which did not meet the goal but did show a trend toward a lower anxiety. Objective three did not meet the established criterion, however, and was therefore considered not to have been successful.

The fourth objective was to decrease absenteeism by five percent. Actually, student absences increased, showing that at this time ITV did not improve attendance. Objective four was therefore considered not to have been successfully attained.

The fifth area of evaluation was to determine students' reaction to the ITV program. Students' written reactions indicated a positive attitude toward television in the classroom. Nine of the ten students liked the program. Observations made by the principal and recorded on an observation checklist supported the positive thinking on the part of the students. Students' actions during the televised lesson were overwhelmingly positive, therefore the fifth area of evaluation showed that the program was successful.

In area six, two of the three teachers submitted written statements about the project. Both were enthusiastic about the program but listed some shortcomings along with suggestions for improvement which were carefully considered in revising the program for the forthcoming year. Both teachers, however, indicated that the program's success overshadowed its shortcomings.

Teacher reaction to staff training was very positive, with over 90 percent positive response to the questionnaire. Teachers believed

they were better prepared to use television in the classroom because of the training they had received. Staff training was therefore considered to have been successful.

The purpose of the practicum was to improve the reading and mathematics skills of selected second-grade students. Reading skills were successfully attained and mathematics skills were very near success. Although not totally successful, based on established criteria, the results in these two areas indicated that the practicum had a positive influence on the students' achievement.

PROBLEMS ENCOUNTERED

During the practicum the following problems were encountered:

1. The tapes were on loan to the school for a period of only one week for each lesson; therefore teachers had limited access to them for planning. An ITV library at Johnston has been requested for the 1977-78 school year. Teachers will be able to have unlimited access to taped lessons.
2. There were 31 students who transferred from the school during the practicum, thus creating problems in teacher planning. Unfortunately, nothing can be done about high student turnover, which is always a problem in the inner city. Planning problems can be countered only by stressing flexibility and advising teachers of the problem during staff training.
3. Some of the telecasts did not meet the needs of the students. Teachers had to adapt the televised lessons to the needs of the students more often than had been anticipated but did so with help from the reading resource teacher and the principal. Plans are being developed to produce programs at the school level to better meet the needs of the slow learner. Teachers will continue to use the lesson plans developed during this practicum. In subsequent staff training, a unit on writing and adapting lesson plans will be taught to the teachers.

4. The test design for the STAIC proved to be unsatisfactory. The students' anxiety level was measured only once after viewing a televised lesson. A measurement should be taken after at least ten televised lessons. A mean of the ten measurements would more accurately reflect the effectiveness of television in the classroom.
5. Because of budget constraints, it was not possible to use commercial programming in the practicum as was originally planned. The dollar cost for the blank videocassette tapes was too much to be absorbed into the 1976-77 budget which had been approved before the practicum began. However, budget proposals for the 1977-78 school year included requests for the equipment necessary for utilizing commercial programs.
6. The teachers were limited in their choice of ITV programs. They were able to use only those programs provided through KERA-TV, making Word Shop the only program available for reading and Math Factory for mathematics. Possible solutions to this problem might be to borrow tapes from other videocassette libraries, to procure at a minimal cost tapes provided through ESEA federal funding, or to allow teachers to make their own videocassette programs.

CONCLUSIONS AND RECOMMENDATIONS

Though the ITV program did not meet all of the objectives which it had originally delineated, it was still deemed successful enough to merit implementation during the 1977-78 school year, with the following recommendations:

1. The staff training program should be expanded and revised:
   a. To train teachers in how to improve lesson plans.
   b. To train teachers regarding how to adapt programs to the slow learner.
   c. To train teachers regarding how to work with students in writing and developing program materials.
2. A videocassette library should be developed:
   a. To include tapes developed by TV station or district for slow learners.
   b. To include tapes designed for inner-city children.
   c. To make tapes available for any length of time throughout the year.
   d. To contact other videocassette libraries and centers which share cassette inter-library-loan rights, borrowing each other's cassettes, i.e., to tap sources other than the limited resources of KERA-TV.

e. To secure the free, or relatively inexpensive, videocassette programs produced by ESEA funds and programmers.

3. Evaluation objectives and test designs should be reconsidered:

a. To include use of other tests to evaluate reading and mathematics skills.

b. To omit the attendance/absenteeism objective.

c. To include a new design for use of the STAIC.

FURTHER APPLICATION AND FOLLOW-UP

During the 1977-78 school year, equipment will be made available to produce a supplemental reading program designed for slow learners. The knowledge gained in this practicum and the pledged support of KERA-TV and DISD personnel will make possible the development of this program. The teachers and students will be participants in writing and developing program materials. They will also participate in the actual production.

The author will be working with KERA-TV and the District to develop a videocassette library. The proposed library for tapes will be established at Johnston to contain tapes which are on loan from KERA-TV and other libraries. The library will also contain all tapes bought by the school and those tapes produced by the school's staff.

A copy of this report will be made available to Dr. Bill Stamps, Assistant Superintendent for Instruction, DISD. Dr. Stamps will be sharing the results of the practicum with the District's instructional staff as they consider the establishment of an Office of Instructional Television.

The report will be made available to Mrs. Pepper Weiss, Director of Instruction, KERA-TV, Dallas, Texas, as suggested input for their constantly changing program of improvement. With KERA-TV and the DISD working together, ITV programs to improve reading and mathematics skills of the inner-city children can become a reality.

RELATED FACTORS

SCHOOL: JOHNSTON, ALBERT S.

AVERAGE DAILY ATTENDENCE	942.26
AVERAGE DAILY MEMBERSHIP	1093.45
INDEX OF AVERAGE DAILY ATTENDENCE	86.17
AVERAGE DAILY TRANSACTIONS	3.12
INDEX OF STUDENT MOBILITY	52.28
NUMBER OF DROPOUTS PER 100	0.00
NUMBER OF CLASSROOM TEACHERS	47.00
NUMBER OF TEACHER AIDES	11.00
AVERAGE PARENTAL EDUCATION LEVEL	13.75
AVERAGE PARENTAL INCOME LEVEL	$17100.00
AVERAGE HOUSING EVALUATION	$31250.00
AVERAGE APARTMENT RENTAL	$ 110.00
SOCIOECONOMIC LEVEL	LOWER

STUDENT ETHNIC DISTRIBUTION

OTH = 2 BLK = 969 MEX = 85 IND = 0 ORI = 0

NEIGHBORHOOD DESCRIPTION

Narrow, paved streets--need repair; stable residential and industrial area; small grocery, neighborhood shopping and industrial centers; declining frame single and multi-family housing, well-maintained brick multiple units; regular and crosstown bus service; maintained and unmaintained vacant land; park within area

TEACHER DEMOGRAPHIC INFORMATION

AGE		RACE		EXPERIENCE		DEGREE	
< 26	6	WHITE	28	0 - 5	3	NONE	0
26 - 35	16	BLACK	17	6 - 10	26	B.A.	31
36 - 45	15	MEX-AMER	1	11 - 15	9	M.A.	16
46 - 55	5	AMER IND	1	16 - 20	6	PH.D.	0
56 - 65	4	ORIENTAL	0	21 - 30	3		
> 65	0			31 - 40	0		

Appendix B

HOW-I-FEEL QUESTIONNAIRE

Developed by C. D. Spielberger, C. D. Edwards, J. Montuori and R. Lushene

STAIC FORM C-1

NAME _____ AGE _____ SEX ____ RACE _____

SCHOOL _____ TEACHER _____ GRADE _____

DIRECTIONS: A number of statements which boys and girls use to describe themselves are given below. Read each statement carefully and decide how you feel *right now*. Then put an X in the box in front of the word or phrase which best describes how you feel. There are no right or wrong answers. Do not spend too much time on any one statement. Remember, find the word or phrase which best describes how you feel right now, *at this very moment.*

1.	I feel	☐	very calm	☐	calm	☐	not calm
2.	I feel	☐	very upset	☐	upset	☐	not upset
3.	I feel	☐	very pleasant	☐	pleasant	☐	not pleasant
4.	I feel	☐	very nervous	☐	nervous	☐	not nervous
5.	I feel	☐	very jittery	☐	jittery	☐	not jittery
6.	I feel	☐	very rested	☐	rested	☐	not rested
7.	I feel	☐	very scared	☐	scared	☐	not scared
8.	I feel	☐	very relaxed	☐	relaxed	☐	not relaxed
9.	I feel	☐	very worried	☐	worried	☐	not worried
10.	I feel	☐	very satisfied	☐	satisfied	☐	not satisfied
11.	I feel	☐	very frightened	☐	frightened	☐	not frightened
12.	I feel	☐	very happy	☐	happy	☐	not happy
13.	I feel	☐	very sure	☐	sure	☐	not sure
14.	I feel	☐	very good	☐	good	☐	not good
15.	I feel	☐	very troubled	☐	troubled	☐	not troubled
16.	I feel	☐	very bothered	☐	bothered	☐	not bothered
17.	I feel	☐	very nice	☐	nice	☐	not nice
18.	I feel	☐	very terrified	☐	terrified	☐	not terrified
19.	I feel	☐	very mixed-up	☐	mixed-up	☐	not mixed-up
20.	I feel	☐	very cheerful	☐	cheerful	☐	not cheerful

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Appendix C

Essential Reading Skills for Second-Grade Students in the Dallas Independent School District

1. Knows beginning three consonant sounds.
   Examples: scr, shr

2. Reads words with alternate long vowel spelling.
   Examples: ai (ā), ea (ē)

3. Reads words with diphthongs.
   Examples: oi, ou

4. Knows common sounds for "c" spelling.
   Examples: can (k), city (s)

5. Knows common sounds for "g" spelling.
   Examples: good (g), gem (j)

6. Reads words with common endings containing a vowel plus. "ck", "ld", "nd", "mp", and "st"
   Examples: fast, hold

7. Identifies base words.
   Examples: pushes, sadly

8. Identifies contractions.
   Examples: do not (don't), he is (he's)

9. Identifies two-syllable words.
   Examples: center, over

10. Can use word attack skills.

11. Recognizes basic sight vocabulary by reading a second grade level passage.

12. Reads with accuracy, fluency and understanding.
    a. Word recognition
    b. Comprehension

Appendix D

Essential Mathematics Skills
Grade 2

1. Use words to compare sizes of objects.
2. Match the number of objects in two sets.
3. Use the expressions "more than," "less than," "the same as," to compare the number of objects in two sets.
4. Rote count fluently from 1 through 10.
5. Use the word "zero" to indicate that there are no objects in a set.
6. Count the number of objects in a set with up to 10 objects.
7. Tell the number that "comes after" a given number (up to 10).
8. Tell the number obtained when 1 is added to a given number.
9. Count from a given number up to 10.
10. Identify the numerals from 0 through 10.
11. Draw the number of objects indicated by a given numeral.
12. Write the numeral that indicates how many objects are in a given set.
13. Rote count from 1 through 20.
14. Add numbers from 1 through 10 written in horizontal notation.
15. Subtract numbers from 1 through 10 written in horizontal notation.
16. Identify the numerals from 1 through 20.
17. Add and subtract numbers from 1 through 20 written in horizontal notation.
18. Add and subtract numbers from 1 through 20 written in vertical notation.

Appendix D
(continued)

19. Find the missing addends in addition and subtraction number sentences. Examples: 5 + ? = 8, 7 - ? = 4

20. Count by 10's through 100. Identify, put in sequence, and write the numerals 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

21. Add and subtract the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

22. Add and subtract whole numbers up to 1000 with no borrowing or carrying.

23. Rote count by 2's, 3's, 4's and 5's up to 20.

24. Use simple fractions with common denominators (halves, thirds, fourths, sixths and eighths.)

25. Rote count from 1 through 1000. Identify, put in sequence, and write the numerals from 1 through 1000.

INSTRUCTIONAL TELEVISION AND LEARNING

CONTENT

By the time the child reaches the age for formal schooling he has spent an estimated one-sixth of his waking hours viewing television at home. He has been bombarded with stimuli concerning war, death, sex, drugs, violence, consumer products, and living patterns for all ages within a world-wide society. He has collected a framework of knowledge of loosely-related facts and vicarious experiences. What a challenge for the first grade teacher!

FRAME-OF-REFERENCE

One tends to identify with any stimulus according to what he knows, understands, or what has happened to him within his lifetime. This is called his frame-of-reference. A student from an inner city environment will probably react differently to any ITV program than will a student from a wealthy family in a suburban community. The word "war" may have a different connotation to a child who has just lost a father in some distant country than it would to the child of a munitions manufacturer. The word "rat" might conjure up thoughts in the ghetto youngster far more intense than those of the child who has just watched a James Cagney gangster movie. When viewing a table, a cabinetmaker might think of the construction of the piece, while the interior designer thinks of its aesthetics. A father and son were in the photographic equipment department of a large store. The boy pointed to a floor-standing photo flood lamp and said, "Look, Daddy, a hair dryer!"

A child's television and environmental experiences will color his view of life. After the first televised landing on the moon, junior high students in an inner-city school in Baltimore were interviewed for their reactions to this spectacular event. Fifty-six percent said that they didn't believe it, indicating that it was probably done with animation and marionettes. They said that they had seen the "real thing" much more believably done in science fiction TV shows and movies. The moon landing coverage was just "too phoney."

Ink blot testing has shown that individuals react differently to a given stimulus, just as scene analysis tests have shown that we reflect our individual needs in observing pictures. In a photograph of a city street during midday, a person who needs to cash a check might first notice the sign of a bank. Someone who is late for an appointment might first notice the clock on the front of the bank. A man on the town might first notice an attractive woman walking into the bank. This is part of the selection process that is related to one's frame-of-reference. An instructional television program may present many opportunities for varied responses from students, and the classroom teacher must be responsive to all such reactions. Follow-up activities from ITV programs should take into

consideration the multivarious reactions to stimuli presented within the program, and the programs themselves should be geared toward the student population for which they are intended.

One study conducted in Washington County, Maryland, investigated a variety of production techniques for ITV lessons. Various techniques for presenting concepts and information were analyzed. After testing, it was found that the least successful means of presentation was the adult authority using lecture methods, and the most effective was the use of dramatizations using actors the same age as the intended audience. Here, the process of identification was a strong factor.

Another national study showed that children had their highest interest aroused by animals, cartoons, and other children, while their lowest interest was in an adult talking.

Perhaps the best way to summarize this aspect of television and learning is to say that ITV programming must be relevant to the students in the target audience; because they learn best when their own "piece of action" is brought into focus. Television's ability to bring into the classroom those things which are relevant is a key factor in instructional design planning. Instructional television planners should beware, however, of trying to be all things to all persons. Rare, indeed, is the television program that can evoke relevancy and identification in all of the students in one class.

MOTIVATION AND OBJECTIVES

Theorists have long debated the motivation issue. What makes some students want to learn, while others listlessly hang back? Individualized instruction techniques concern themselves with individualized motivation. A student will usually strive to learn if the goal is geared to his ability and interest level.

Individualized instruction philosophies assume that a teacher receives a given group of students with varying entry points on a scale of learning abilities. If "Johnny" is able to cope with point ten on a scale of one hundred but not with point eleven, he should be started on a learning program that will take him from point ten to point eleven. Meanwhile, if "Jimmy" is at point fourteen on the same scale, he should be programmed to advance to point fifteen. These short jumps of progression along the learning continuum, with accompanying rewards or reinforcement, should provide motivation for the student to want to advance to the next step. However, without the technological help to diagnose, program, and evaluate each student at each step, the teacher is frustrated when trying to apply these theories to a large class.

Appendix E
(continued)

For the student to be motivated to utilize ITV or any other learning resource he must not only feel comfortable with relevant material, but he also must understand what he is expected to accomplish in this next jump on the scale. Simplicity and a clear organization of these learning resources is very important. Each student must understand clearly the objectives for his learning program. This is as important in preparing a student for watching an ITV program as it is in preparing him for a drill in a workbook. This programming of learning resources to achieve clearly identified learning objectives is at the heart of the issue of instructional design and educational technology.

REENFORCEMENT

The ideas presented above generally refer to what is so often called "pre-telecast" activities. Concepts within this segment are associated with "post-telecast" or "follow-up."

Many theorists agree that one extremely important aspect of the learner's retention of the desired outcomes greatly depends upon the reward factor. The smile of a teacher, a gentle touch on the shoulder, a verbal acknowledgment, or a more tangible expression of reward will aid in the student's learning. Designers of learning programs are very conscious of such needs as they build congratulatory remarks into their designs to be used in books or teaching machines. Unfortunately, designers of ITV programs too often have overlooked or misused this important facet of learning theory. ITV programs have been observed in which TV teachers have asked a question to their unseen audiences, paused, and then said, "That's right!" or "Good!" If the student has confidently chosen the wrong answer and has been rewarded for it, he will be quite confused later. This one-way, nonstop aspect of much current ITV technology can be a hindrance to this reinforcement/reward factor. Hopefully, future two-way TV systems will help.

REPETITION

Repetition is another aspect of reinforcement. Children can watch the same cartoon dozens of times without becoming bored as they sit at home. Yet, teachers fear that repeated viewings of ITV programs in the classroom are a waste of time. With careful guidance, however, such repeated viewings can aid in retention of learning as well as in discovery of new insights and relationships. Because of television's ability to compress a great deal of information into a short time frame, ITV programs often present too much, too quickly, and a follow-up viewing will almost be required for solid student learning. Indeed, repeat viewings of these television lessons are recommended for your own learning.

Appendix E
(continued)

Sesame Street, one of the most successful children's pre-school TV series, uses extensive repetition, with variations, for key concepts to cement learning of such things as numbers and letters of the alphabet. Recitation of the alphabet is a rather easy skill to master, and the planners of the series have used it as a badge of confidence for the slow-learning pre-schooler. This is a classic example of reinforcement.

One final note on repeats: many football experts concur that the instant replay capability of television has done more for teaching the fundamentals of football to the public than any other technique.

VISUAL LITERACY

In general, visual literacy relates to communication through the use of visuals rather than through the use of words. Until recently, teaching has been oriented to verbal literacy in reading and writing, and visual literacy has been limited to art appreciation courses. However, the impact of television and film in recent years has made us aware of the many ways that we have to communicate ideas. Recent studies in such things as "body language" have also made us more aware of the depth of the communication process. Visual literacy often precedes verbal literacy.

Studies have shown that we learn more by our sense of sight than by any other single sense, although our greatest learning comes through the combination of integrated sight and sound. This combination must be tightly associated, however, or the student will become confused. Carefully chosen visuals will enhance reinforcement if they are simple and clear and if they are closely related, in time, with their verbal associations. Always remember that most students can see and hear well even if they can't read well.

FOCUSING

Concentration is one of the major psychological weaknesses in our society. We are constantly being bombarded with aural or visual stimuli to such an extent that we have learned to sublimate much of what we hear and see. The challenge is to be able to sublimate all but that upon which we are trying to concentrate. Children also have learned to "tune-in and -out" of TV programming. They "turn-off" what doesn't interest them, and they "turn-on" what does. We must learn, therefore, in preparing ITV programs to give them either visual or aural cues to turn them back on to important concepts or information. But the attention-getting device must be relevant to the target audience.

Appendix E
(continued)

Television in the classroom has an unusual ability to foster focus. It seems to force students to concentrate upon the TV screen and sublimate the extraneous stimuli present in the room. The eye of the camera can zoom into the heart of the artichoke and eliminate that which is not necessary to learning. Also, listening skills are enhanced. There is one ITV series in physical education in which students perform activities at the direction of the TV teacher without having to watch the television set. Then, when she calls them to "gather round" the receiver, they quickly follow the directions. This is a salient example of ITV using focusing, cues, and sublimation as integral parts of the lesson.

SOME OTHER CONSIDERATIONS

PAUSES, PACING, AND LENGTH

There are times when an ITV lesson may slow down, or even provide a break, to provide students with an opportunity to perform a directed exercise. Not only does this bring the activity back to the classroom, but it provides a respite from the rat-a-tat-tat of information presentation. The pacing of the television lesson is also important here. A varied pacing of the lesson will maintain student interest which might otherwise wane. In addition, the length of the ITV program should be suited to the attention span of the viewer. Five to fifteen minutes of concentrated presentation seems to be enough for the primary school youngster, while twenty- to thirty-minute TV lessons can be handled by students in the secondary school areas.

COLOR

Even though a great many classrooms are still equipped with black and white receivers, it is suggested that all new sets purchased be equipped for color. Virtually all new ITV programming is being produced in color, and color provides a realism greater than that delivered by monochromatic devices. Also, for certain areas of the curriculum, color can aid in the cueing and contrasting of elements necessary for learning. To be sure, some ITV productions have been weighted more toward the aesthetics of color than toward such learning keys. However, more studies are showing the values of color for learning. Other considerations for color must include the connotative aspects. The power of warm colors such as red and orange to symbolize heat, anger, and danger are important to ITV program planners. Studies show also that these hues increase the pulse rate, while blues and greens seem to relax the viewer and connote a cool and calm atmosphere.

ESTABLISHING THE CLIMATE FOR INSTRUCTIONAL TELEVISION: II

ESTABLISHING THE ENVIRONMENT FOR ITV

STAGING FOR TELEVISION

The teacher should undertake careful planning of the right environment, or climate, for ITV before the students arrive or before they use the medium. A little extra time spent planning will save many frustrations if avoidable problems occur. As a model, a traditional rectangular classroom with desks in ranks and files can be used. Also, assume that the entire class will watch the same ITV program at the same time. Since it is a simple matter to arrange the furniture, flexibility should always be in the foreground. The model may be transferred to other situations.

1. Assuming that just one television receiver is available, the question is where to put it. Experiment! If it is on a rolling cart, try to find a spot in the room where all can see the picture. Corners usually work best. There is one limitation, however. Electrical outlets

and tap-offs to master antenna systems may place limitations on the placement, but extension cords may be secured for more flexibility. Also, putting it on the window side often eliminates the problem of glare on the screen.

Often, manuals on the utilization of ITV go into great detail describing viewing angles and seating diagrams. Here are some basic rules culled from such discussions.

a. No student should be so far to the side of the screen that he can't see the entire picture.

b. No student should be too close to the TV set. (Distortion of the picture, eye fatigue, neck stiffness from craning, and potential radiation from color TV are some of the reasons.)

c. No student should be too far away from the TV set to visually perceive all that is intended. A rule-of-thumb says that the number of inches the TV screen measures diagonally should equal the maximum number of feet from student to set. However, some TV productions fail to make such things as lettering readable, even at that distance.

d. Take special note of special students. Hearing and sight problems would require flexibility in seating these students.

e. Check all sight lines from the students' points-of-view. Remember, however, when you sit in a first grader's chair, your eye level is different from his.

2. Avoid glare on the screen. Experiment by tilting the set and checking from various points within the room. Window shades and overhead lights should be checked for additional sources of glare. The more effort a student uses to strain, the less he has left for learning.

3. Audio is often the most neglected aspect of classroom television viewing. Too often, the volume is not high enough for all students to hear, and those toward the back of the room will "turn-off" and perhaps become distractive to others. Indeed, in many cases, this is a rather severe problem in the open-space school situation where noise is a pervasive feature. Any volume of sound at all seems to be distractive to some

nearby groups. Therefore, TV equipment is turned-down below normal, and, invariably, some students in the TV viewing group can't hear. Noise from playgrounds outside of schools without air conditioning are particularly annoying to concentration. One open-space school visited used additional speakers around the viewing space to "wrap" the students with sound.

4. Management for ITV differs little from the normal concept of classroom management. Some considerations would include the following:

   a. If a teacher shares a TV set with others, it would be a good idea for him to get the set early, turn it on, and check to see that all is O.K. If not, there is time to troubleshoot. The set can be left on with the sound down and the contrast knob turned to black so that things are ready to spring to life when the teacher is ready.

   b. Students can be assigned tasks of tuning-in and turning-off equipment, designing and constructing TV-related displays and bulletin boards, and distributing and maintaining supportive materials.

   c. If a smaller group of students within the class is assigned to watch a given program, such prescriptive lists and schedules can be kept on the chalkboard.

Mastery Objective: To demonstrate that some fractional parts may be equivalent to other fractional parts and that a fractional part of a number in a set or of a whole may be found.

Branch: Mathematics

Learning Level/Course: 2

Suggested Time:

Focus	Ideas	Resources/Materials
	1. Draw a set of 6 rectangles on the overhead projector. Lead children to discover that 1/2 can name a part of a single rectangle or a part of the set of 6 rectangles. Do the same activity with 1/3 and 2/3.	1. Overhead projector
	2. View telelesson- Discuss content points.	2. Math Factory- videotape #23, T.E. pg. 53
	3. Present several familiar shapes, have children separate each shape into halves. Then have the children separate each shape into thirds then fourths.	3. Familiar shapes- at least 3 of each
	4. Present a set of 4 squares. Have children separate the squares into halves, then fourths.	4. 4 squares, circles or rectangles.
	5. Ask children to compare the halves of the single whole objects in activity 3 with the halves of the set of objects in activity 4. Try to point out that 1/2 as a numeral always means the same thing, but that the sets we deal with may represent different amounts of regions or numbers.	
	6. Workpage.	6. Houghton Mifflin, Book 2, pp. 237-238.

Focus	Ideas	Resources/Materials
	7. Have children shade areas of different shapes. Then have them circle 1/3, 1/2, 3/4, 1/4, etc. of groups of sets.	7. Teacher made ditto.
	8. Referring to the telelesson, ask children whether they would prefer to have 1/2 of a puzzle pie or 1/2 of a set of 4 puzzle pies. Let children express their ideas pictorially as well as verbally.	

Mastery Objective: To have students master writing horizontal and vertical addition and subtraction number sentences.

Branch: Mathematics

Learning Level/Course: 2

Suggested Time:

Focus	Ideas	Resources/Materials
Presentation of language and symbols of addition and subtraction.	1. Review the meaning of +, -, =, signs. Use flash cards both with problems written vertical and horizontal and having addition and subtraction problems on them. Mix them up and give students practice in recognizing these symbols immediately.	
	2. View: Math Factory - Writing Number Sentences	2. Instructional Television Math Factory-Writing Number Sentences.
	3. Discuss what was seen on ITV. Talk about horizontal and vertical and their meanings	3. Teacher's Guide (p. 39) Math Factory, 1972: Mississipp Authority for Ed. T. V.
	4. Draw objects on the board in addition or subtraction form.	
	5. Introduction in Mathematics Books.	5. Macmillan 1976, Mathemati Series M- Unit I Addition & Subtraction page 1-50. Houghto Mifflin. Modern School Mathematics-Structure and Use, 1972, Book 2, pages 15-2 52-59, 111.

Mastery Objective: con't, number sentences

Branch:

Learning Level/Course:

Suggested Time:

Focus	Ideas	Resources/Materials
	6. Use already manufactured game for children to make number sentences with or cut out your own number and signs and have students make number sentences.	6. Link Numbers- 250 die cut numberals, Milton Bradley #MB9518 $2.00, Practical Drawing Store
	7. Use addition and subtraction, Quizmo.	7. Arithmetic Quizmo-Milton Bradley, MB 9309 $3.35 Practical Drawing

Mastery Objective: To introduce addition of tens and ones without regrouping or carrying.

Branch: Mathematics

Learning Level/Course: 2

Suggested Time:

Focus	Ideas	Resources/Materials
To add two digit numbers without regrouping.	1. Review addition of ones or addition facts.	1. Use addition flash cards.
	2. Review place value of two digit numbers.	2. Use an abacus or make place value charts or buy some.
	3. Introduce the addition of two digit numbers using the shor and expanded form.	3. Practical Drawing Cat. # ID 7755
	4. View: Math Factory- Addition of Tens and Ones	4. Instructional Television Math Factory-Addition of Tens and Ones
	5. Follow up in Teacher's guide for ITV and your own discussion of the TV show	5. Teacher's Guide- Math Factory- 1972, Mississippi Authority for Educational Television, p. 41.
	6. Use dimes (as tens) and pennies (as ones) to illustrate the idea.	6. T. E. for Instructional TV p. 41.
	7. Introduction in Texts	7. Houghton Mifflin-Modern School Mathematics Structure and Use, 1972 pages 93-98 157-171. Macmillan Mathematics Macmillan series M-1976 pages 114-120.

Mastery Objective: con't addition of ones and tens

Branch: _____

Learning Level/Course: _____

Suggested Time: _____

Focus	Ideas	Resources/Materials
	8. Have board races and make up a game where the students spin and have to answer the problem before they can move on the board the number of spaces in the circle. First one to get around, wins.	

Mastery Objective: Demonstrate mastery of multiplication facts (10's, 5's, 2's). (U)

Area: Mathematics

Learning Level: 2

Approximate Time of Unit:

What should student say, write, or do as a result of completing activities:

Focus	Ideas	Resources/Materials
To introduce the idea of multiplication to the children To provide a background for the study of multiplication. (Note: the teacher's manual of this lesson says that this program does not mention multiplication.)	1. Talk about the terms "equivalent sets" and "equal addends." 2. Show the children how 2 sets of 3 would be the same as 3 sets of 2, and so on. (Use beads or flannel board.) 3. View the Math Factory Program 13 "Beginning Concepts in Multiplication" 4. After the program, give the children beads so they can construct equivalent sets. Have them practice as you call them out. 5. As reinforcement of previous program and this one, draw numberline, have the children come up and circle the even numbers, then the 5's, then the 10's, then the 3's.	1. Beads- counting 2. Math Factory- Program 13. "Beginning Concepts in Multiplication" 4. Numberline

Mastery Objective: Identify place value of each digit less than 100. (H) Add any 2 digit number (I)

Area: Mathematics

Learning Level: 2

Approximate Time of Unit: _____

What should student say, write, or do as a result of completing activities: _____

Focus	Ideas	Resources/Materials
The child will begin to understand the meaning of the 10's place.	1. Practice counting orally by 10's, with the whole class.	1. Sticks for making into groups of 10, bottle caps, etc.
	2. Count groups of objects made into sets of 10 by tens.	2. Math Factory, Teacher's Guide p. 37, "Attention to Tens".
	3. Have the children write from 10 to 90 by tens on their paper.	
	4. View the Math Factory lesson "Attention to Tens."	4. Math Factory Teachers Guide p. 37, Attention to Tens.
	5. Talk about the program, discuss the idea that joining sets of 1 is the same as joining sets of ten. Also, subtracting sets of 10 is the same as subtracting ones.	
	6. Point out that 0 is an important place holder. Count stacks of dines and stacks of pennies. Talk about the difference in the amount of money (Why the zero is important)	6. stacks of dimes and pennies.
	7. Begin working in MacMillan series M	7. MacMillan series M, Level 2.

Program 1 Story Telling- Word Shop

Focus	Ideas	Resources/Materials
Story Telling all good stories are planned. They have a structure (beginning middle and end)	1. ITV. Re-read The Three Bears. Have children analyze the story for beginning middle and end. Dramatize.	Word Shop Program, Video Tape Teachers guide, Props for dramatization.
	2. Try Three Billy Goats Gruff, Snow White. Do language experience story. Stress beginning, middle and ending.	Chart paper
	(Allow children to view video tape independently to review. Procedure used for all programs in series.)	

Program 9 Story Maker

Focus	Ideas	Resources/Materials
Acting out original stories created by the students, using story parts, characters, setting, action, structure. The stories can be mysteries, fantasies, discovery, tall tales.	Review the roles adn importance of characters in stories. Characters can be any person any animal or any thing the students want to be.	Video Tape Program 9. Word Shop Teachers Guide.
	Write, act out and tell a story that uses all of the story parts. Write stories on charts for children. Learn to recognize different types of stories. Have children tape their stories. (This activity continued for two weeks)	Chart paper. Blank tape

Program 12 Poems As Nonsense

Focus	Ideas	Resources/Materials
Nonsense poetry combines words that have new meanings or no meanings at all to produce new sounds and new rhythm define nonsense.	Poets invent nonsense and made-up words for the fun of it and for the interesting sounds the words make. Listen to a poem which has nonsense words that rhyme. Let the students figure out the reason for the nonsense words (to achieve rhyme) and decide if the poem is made better by rhyme. Create own nonsense words.	Video Tape-Word Shop Program 12 Teachers guide. Book, Alice in Wonderland, by Lewis Carroll. Chart paper.

Program 22 Comic Strips

Focus	Ideas	Resources/Materials
Comic strips are picture stories.	Comic strips are read from left to right just like sentences. Famous characters, Charley Brown, Superman. Comic strips sometimes use a special language (biff, pow, sock) that has become famous and indigenous to the United States. Comic strips contain all of the story elements (setting, action, characters and structure in an abbreviated form) Read comic books.	ITV video Tape Word Shop Program 22. Comic Books

Appendix H

Observation Check List

1. Student promptly went to assigned place to begin the lesson.

   Yes No

2. Student contributed to the lesson either orally or written.

   Yes No

3. Student completed assignment on time.

   Yes No

4. Number of positive student comments made during the lesson. _____

5. Number of negative student comments made during the lesson. _____